

Building the New Reclaimed Water WAC
Proposed Draft Rule Language – work in progress (WIP) for
Rule Advisory Committee Use Only – Wednesday, June 24, 2009
No changes 7/22/2009

**Part V GENERAL REQUIREMENTS FOR STORAGE, DISTRIBUTION
AND USE – version 1.1**

(6/18/2009)

Note: Embedded in the following language are questions related to significant rule changes. Unless otherwise noted, all recommended changes are endorsed by both the TAP and Ecology.

Intent of Part V

1. Clarify requirements for OPERATIONAL STORAGE where there is seasonal use or rates less than production. Avoid confusion with emergency storage for off-spec water (see reliability section).
- +2. Clarify the use of chorine in a DISTRIBUTION SYSTEM to prevent regrowth of bacteria or biofilm. This supplements the use of a disinfectant as treatment and is not meant to replace that component.
- +3. Specify pipeline separation standards by stating “normal” separations as used by the Orange Book and industry. Allowing for exceptions to separation when justified per existing guidance. <http://www.ecy.wa.gov/pubs/0610029.pdf>
- +4. Incorporate existing cross-connection control guidance into rule.
- +5. Clarify requirements for transport of reclaimed water via tank trucks.
- +6. Adapt existing guidance for minimum setbacks to potable water supplies for a two class water quality standard
7. Specify minimum use area and labeling requirements. These will be supplemented by separate guidance.

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Proposed Sections

- 173-219- 410 Emergency Operational storage of reclaimed water.
173-219- 420 Distribution system requirements.
~~173-219- 420~~ ~~173-219- 430~~ Distribution by tank trucks.
~~173-219- 420~~ ~~173-219- 440~~ Minimum setback distances from potable supplies.
~~173-219- 420~~ ~~173-219- 450~~ General use area requirements.
~~173-219- 420~~ ~~173-219- 460~~ Labeling of reclaimed water.

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Proposed Content

Questions for next section – 410: Emergency-Operational storage of reclaimed water.

1. Should “emergency” and “operational” storage be contained in the same Part of the rule? In the current draft, emergency storage is addressed in WAC 173-219-350 under retention facilities for reliability purposes.

~~1.2.~~ Should design capacity be specified in guidance instead of rule?

~~1.3.~~ Should the rule list specific considerations for determining storage design capacity with additional info in guidance?

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WAC 173-219-410 Emergency-Operational Storage of Reclaimed Water

1. Whenever reclaimed water is generated that cannot be used as permitted, the person maintaining control¹ must store the reclaimed water until it can be used, divert it to a different use, or discharge it to a permitted discharge location. If the reclaimed water is retained in storage, the provisions of WAC 173-219-420 must be met at the time of distribution.
2. The minimum storage capacity shall be determined using methods provided in **Design Criteria for Reclaimed Water Systems** and documented in the engineering report or facility plan.²
3. Storage capacity design calculations shall consider all of the following:
 - a. Types of use
 - b. Supply, demand and operating requirements and agreements
 - c. Potential for impact to human health and the environment
 - d. Frequency and duration of adverse weather conditions such as precipitation or frozen ground that would preclude use
 - e. Shut down for system maintenance and repair
 - f. Other factors that may limit or prevent the planned use of reclaimed water
4. The departments may approve an alternative design with equivalent reliability in accordance with **Design Criteria for Reclaimed Water Systems**.

¹ This is not always the permittee. Storage may be provided by an end user under contract.

² The TAP recommends that former storage standards of 1) three times average daily flow, and 2) capacity to store for the duration and intensity of a 10-year storm, be placed into **Design Criteria for Reclaimed Water Systems**. The Engineering Report shall contain basic design data and sizing calculations. The TAP suggested that the permitting agencies may approve an alternative design for storage volume if supported by documentation of equivalent reliability.

Questions for next section – 420: Distribution System Requirements

1. Should the 0.5 mg/L chlorine residual be replaced by “detectable”?
- ~~4.2.~~ Should pipe construction and cross connection control requirements be clarified to allow greater protection of higher quality water?
- ~~4.3.~~ Do we have the proper language in 4. d. and e.? Different cross connection control methods apply to two separate sources (1 potable & 1 reclaimed) to a use area versus a direct plumbed connection between the two sources.
- ~~4.4.~~ Does 4.e. belong in this section or under Part I, permitting exclusions or Part VI specific use requirements?

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WAC 173-219-420 Distribution System Requirements

1. **Maintenance of Chlorine Residual.** Except as provided under a and b of this subsection, the person maintaining control of reclaimed water shall provide a detectable chlorine residual measured as free, total, combined, or chlorine dioxide during conveyance from the reclamation plant to the point of use.³
 - a. Maintenance of a chlorine residual is not required in reclaimed water impoundments and storage ponds, unless the type of beneficial use or distribution system following storage requires a chlorine residual to prevent biological growth or deterioration of water quality.⁴
 - b. Where justified due to the type of beneficial use, the departments may waive the requirements for maintaining a chlorine residual during conveyance to the point of use.
2. **Labeling.** The person maintaining control of the reclaimed water shall label all reclaimed water valves, storage facilities, and outlets to warn the public or employees that the water is not intended for drinking. Labeling requirements are specified under WAC 173-219-560.
3. **Pipe Separation.**
The person maintaining control of the reclaimed water shall assure that adequate separation is maintained between reclaimed water lines, sanitary sewer lines, storm sewer lines, and potable water lines in accordance with ***Design Criteria for Reclaimed Water Systems***, latest edition, as published by the departments.⁵

³ The TAP recommends that the 0.5 mg/L chlorine residual be replaced with a “detectable chlorine residual measured as free, total, or chlorine dioxide.”

⁴ The TAP recognizes that water quality requirements following storage are project specific, based on type and retention time, uses following storage, and extent of the distribution system. Requirements should not discourage the use of reclaimed water compared to alternative sources.

⁵ This comprehensive guidance manual will incorporate the current or latest edition of ***Pipeline Separation Design and Installation Reference Guide*** as adopted by the departments. The criteria stated here is consistent with the “standard” Orange Book criteria for separation. Also consistent with the Orange Book, this guidance permits flexible separation distances when standard distances cannot be met.

Unless the departments approve a lesser separation distance within an approved engineering report, the following shall be maintained:

- i. A minimum horizontal separation of 10 feet between reclaimed water lines, sanitary sewer lines, storm sewer lines, and potable water lines.
- ii. When crossing, a minimum vertical separation of 18 inches between reclaimed water lines, sanitary sewer lines, storm water lines and potable water lines. The pipeline of higher water quality shall be placed above pipelines of lower quality.

4. Cross- connection control

- a. There shall be no cross-connections between the reclaimed water, potable water, and other systems of lower water quality.
 - b. The permittee or person(s) who distributes reclaimed water or owns or otherwise maintains control over the use area shall coordinate cross connection control with the water supplier which provides potable water to the use area. ~~The potable water purveyor must establish and obtain approval from the Washington Department of Health for a cross-connection control and inspection program pursuant to WAC 246-290-490.~~
 - c. Where both reclaimed water and potable water are supplied to ~~a reclaimed water~~ any use area, a reduced pressure principle backflow prevention device or an approved air gap separation shall be installed at the potable water service connection to the use area in accordance with the locally adopted plumbing code.
 - d. Where potable water is used to supplement a reclaimed water system, there shall be an air gap separation, approved and regularly inspected, as directed by the potable water supplier's cross connection control plan, between the potable water and reclaimed water in accordance with the locally adopted plumbing code.
 - ~~e.~~ Reclaimed water may be used in a dwelling unit or a building containing a dwelling unit for fire protection, toilet or urinal flushing, or other nonpotable purposes, if said purpose is allowed under state or local plumbing codes.⁶
5. **Other Design Requirements.** Reclaimed water distribution pipe material, valves, valve covers, hydrants, and associated components shall comply with the most recent AWWA Manual M24 standards or other recognized standard engineering practices.

Questions for next section – 430: Distribution by Tank Trucks

1. *Should a third paragraph be added which specifies that a 0.2 mg/L chlorine residual be maintained at the point of use?*

⁶ The TAP recommends that indoor use of reclaimed water not be prohibited but controlled via local or state plumbing codes. These codes specify backflow control methods for in-premises use.

WAC 173-219-430 Distribution by tank trucks

1. Tank trucks (and similar equipment) may be used to distribute reclaimed water provided the tank truck is:
 - a. Clearly identified with reclaimed water advisory signs.
 - b. Inspected and approved for such use by the reclaimed water permittee to ensure that hazardous or dangerous waste is not present in the tank prior to transporting reclaimed water.
2. Tank trucks used to transport reclaimed water shall **not** be:
 - a. Used to transport potable water that is used for drinking or other potable purposes, unless they have been cleaned and disinfected to the satisfaction of the potable water purveyor, and the tank truck is contracted to or operated by an approved public water supplier.
 - b. Filled ~~through on-board piping or hoses by equipment~~ that may subsequently be used to fill tanks with water from a potable water supply.

Questions for next section – 440: Minimum Setback Distances from Potable Supplies

1. Are these the proper setback distances? They are from guidance as adapted to the Class changes.

WAC 173-219-440 Minimum Setback Distances from Potable Supplies

1. The minimum setback distance between any reclaimed water pipeline and a potable water supply well shall be

Reclaimed Water	Minimum Setback Distance
Class A or higher ²	50 feet
Class B	100 feet

2. Where reclaimed water is used for spray or surface irrigation, the minimum setback distance between the area subject to irrigation and any potable water supply well shall be:

Reclaimed Water	Minimum Setback Distance	
	To Potable Supply Well	For Spray Irrigation, to Public Area
Class A or higher	50 feet	None
Class B	100 feet	50 feet

3. Where reclaimed water is used for an impoundment, storage pond, or wetland, the minimum setback distance between the perimeter of the impoundment or wetland and any potable water supply well shall be:

Reclaimed Water	Minimum Setback Distance	
	Unlined or with seepage to ground.	Lined or sealed to prevent measurable seepage
Class B or higher	500 feet	100 feet

4. The lead agency departments may approve exceptions to the required minimum setback distances, provided the lesser setback distances are demonstrated to the satisfaction of the lead agency departments to assure an equal degree of public health and environmental protection.⁸

WAC 173-219-450 General Use Area Requirements

1. The person maintaining control of the reclaimed water shall assure that the public and employees are notified of the use of reclaimed water at all use areas. This shall be accomplished by the posting of advisory signs at use areas, distribution of written notices to residents or employees, or by other methods.
2. Except as otherwise approved by the departments, reclaimed water, including runoff and spray, shall be confined to the designated and approved use area in accordance with the state permit. Adequate measures shall be taken to:
 - a. Assure that reclaimed water will not be sprayed on people or any facility or area not designated for reuse, including but not limited to buildings, passing vehicles, and drinking water fountains.
 - b. Prevent the unplanned ponding of water, breeding of vectors of health significance and the creation of odors, slimes, or aesthetically displeasing deposits.
3. All reclaimed water valves and outlets shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Access to hose bibs on reclaimed water lines must be controlled or restricted.
4. The person maintaining control of the reclaimed water shall label all reclaimed water valves, storage facilities, and outlets to warn the public or employees that the water is not intended for drinking.
5. The person maintaining control of the reclaimed water shall assure that the maximum attainable separation between reclaimed water lines and potable water lines shall be practiced at the use area.
6. Additional use area requirements may be specified under WAC 173-219-600 through 173-219-900.

⁸ Specific guidance will be provided to clarify the manner in which equivalency may be demonstrated.

WAC 173-219-460 Labeling of Reclaimed Water

1. All reclaimed water piping, valves, outlets, storage facilities and other appurtenances shall be color-coded purple [Pantone 522 or other shades of purple acceptable to review agencies], taped purple [Pantone 512 or other shades of purple acceptable to review agencies], or otherwise marked to identify the source of the water as being nonpotable reclaimed water.
2. Signage or advisory notification shall be colored purple with white or black lettering [Pantone 522 or 512 or other shades of purple acceptable to review agencies]. Signs or notification should read “Reclaimed Water – Not Intended for Drinking” or other advisory or educational language acceptable to the lead agency departments. Where appropriate (depending on the level of reclaimed water treatment), such warning shall inform the public or employees that full body to avoid contact with the water is not recommended.⁹

⁹ Additional details regarding the labeling of pipe and appurtenances will be placed in guidance. There is no reason to use the marking “CAUTION: RECLAIMED WATER – DO NOT DRINK” in all situations.